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Toward a Global High-Definition TV Production Standard

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Following is a statement by Ambassador Sonia Landau, U.S. Coordinator and Director of the Bureau of International Communications and Information Policy, before the Subcommittee on Telecommunications, Consumer Protection, and Finance of the House Energy and Commerce Committee, Washington, D.C., March 8, 1989.

The State Department has been involved in HDTV [high-definition television] issues for 15 years and has focused primarily on the standard for production and international program exchange. I would like to highlight today the important role of production standards in the total HDTV equation. I will also describe, in some detail, how the State Department, in close conjunction with other U.S. Government agencies and the private sector, has sought to promote U.S. interests through adoption of a single, worldwide HDTV production standard and our strategy for the future.

HDTV Production Standards

HDTV standards can be divided into three categories:

- Standards for the studio and international program exchange, called "production" standards;
- "Transmission" standards or standards for delivery systems, including terrestrial transmission systems, satellite transmissions, cable systems, and videotape systems; and
- Standards for display systems, such as home television sets and receivers for public display.

The issue of a single standard for studio production and program exchange is extremely important and warrants our attention for several reasons.

First, the new high-quality video technologies have the potential to replace the current video technologies and, more importantly, to supplement 35mm film, which serves presently as a *de facto* world standard.

Second, a worldwide HDTV production standard would facilitate lower overall costs due to economies of scale in equipment manufacturing, the ease of program exchange and international coproductions, as well as the interoperability of equipment.

Third, a worldwide production standard would greatly facilitate the exchange of HDTV motion pictures, videos, and other production materials around the world. A market in which two or three standards operate simultaneously would pose the same difficulties that currently hamper TV production where NTSC [National TV System Committee], PAL [phase alternation line], and SECAM [sequential with memory] standards now prevail in different parts of the world.

Finally, a single, worldwide production standard would serve U.S. commercial interests, since entertainment is currently one of our largest exports. Presently, the United States commands 85% of the world's export market for cinema, broadcasting, cable, satellite, and VCR [video cassette recorder] distribution. The United States enjoys a current annual surplus of $2.8 billion in the export of movies and television shows. Looking to the future, most observers predict that the production of high-definition programs will be a multibillion dollar international market.

U.S. Policy Formulation

During the past year the State Department has been an active participant in executive branch discussion on HDTV that have taken place in the Economic Policy Council and the Trade Policy Review Group. In addition, for a much longer period of time, the Bureau of International Communications and Information Policy has coordinated U.S. participation in HDTV activities in the the International Telecommunication Union (ITU). The State Department—in consultation with the Commerce Department, Federal Communications Commission (FCC), and other U.S. Government agencies—has responsibility for U.S. participation in the ITU's International Radio Consultative Committee (CCIR), which serves as the global focal point for conducting studies and developing recommendations on technical and operational radiocommunications questions.

Before discussing the CCIR's work on a worldwide HDTV production stand-

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ard, let me explain how the State Department formulates its CCIR positions. In our policy coordinating role, we systematically bring together private sector and other U.S. Government input through advisory committees and constant informal monitoring of relevant opinion. Our key advisory committee for international broadcast issues is the U.S. National CCIR Organization. This committee is open to any interested federal agency, private company, individual consultant, industry group, standards body, and the public in general. Its purpose is to advise the Department of State on the appropriate contributions and positions to be taken in the international CCIR meetings.

The National CCIR Organization is chaired by the State Department with the FCC and the National Telecommunications and Information Administration (NTIA) of the Commerce Department as vice chairmen. The Defense Department, the National Aeronautics and Space Administration, United States Information Agency, and several other agencies also actively participate. The major broadcasting organizations and broadcasting equipment manufacturers are represented and provide valuable input for policy decisions, such as our position on an international HDTV production standard. These positions are thoroughly vetted in the national CCIR process, including interagency review, before a final determination is made by the State Department.

In the case of HDTV and other broadcast matters, the pivotal part played by the private sector is natural, since privately owned and operated stations, networks, and program producers are directly affected by our policies. In fact, private-sector studies of standards for advanced television systems have been underway for more than a decade. Three prominent U.S. private-sector organizations have played a decisive role in the evaluation and adoption by the United States of the 1,125 lines and 60 fields per second standard for international HDTV studio and program exchange.

• **The Advanced Television Systems Committee (ATSC)** was established in 1982 by the five members of the Joint Committee for Intersociety Coordination. They are the National Association of Broadcasters, the National Cable Television Association, the Electronic Industries Association, the Society of Motion Picture and Television Engineers (SMPTE), and the Institute of Electrical and Electronic Engineers. Membership includes American companies and organizations having a direct, bona fide interest in advanced television standards.

• **The Society of Motion Picture and Television Engineers,** composed of technical persons involved with production, began studying advanced television in 1977.

• **The American National Standards Institute (ANSI)** functions as a coordinating body for encouraging worthwhile standards as American national standards.

The U.S. position advocating CCIR adoption of the 1,125/60 international production standard is based on thorough analysis of industry research and recommendations by groups such as the three listed above. A fundamental U.S. standards setting principle has been the reliance on voluntary industry standards to the maximum extent possible. We consider this principle to be equally applicable in the development of U.S. positions on international standards.

CCIR Activity

The CCIR has been involved since the early 1970s with the issue of proposed HDTV standards for studio and international program exchange. These standards have been a prominent issue in the CCIR since 1983 when Study Group 11 (television) established a specialist group to study all facets of HDTV and to prepare recommendations. At that time, it was agreed to strive for a draft recommendation for a single, worldwide HDTV standard for the studio and international program exchange within the 4-year work cycle ending at the 1986 plenary assembly in Dubrovnik, Yugoslavia. Additionally, it was decided that recommendations on other aspects of HDTV, such as transmission and display standards, would be finalized during the following work cycle, 1986–90.

As a result of the policy formulation process I outlined earlier, the U.S. Government, in September 1984, proposed to the CCIR adoption of a recommendation on the 1,125/60 production standard, which was overwhelmingly supported by U.S. industry. This standard, developed by U.S. industry in the SMPTE, was based in part on research, experimentation, and development carried out by NHK, the Japanese national broadcasting corporation. The SMPTE result differed from the Japanese work in several respects. The differences from the original Japanese parameters involved, among others, the aspect ratio, a progressive scan option, recommendations on colorimetry, and the digital sample ratio.

The Japanese changed their own initial proposal and supported the U.S. modifications after they realized that U.S. support for an 1,125/60 system was contingent upon the adoption of our parameters. Canada and Mexico have also been strong supporters of the 1,125/60 standard. Japanese manufacturers have moved to market equipment based on the 1,125/60 standard.

In 1985, the U.S.-proposed 1,125/60 standard was adopted in the form of a draft recommendation presented to CCIR Study Group 11. The October 1985 Study Group 11 meeting saw the emergence of two distinct camps. On one side, Japan, Canada, and the United States supported adoption of the 1,125/60 standard. On the other side, several European Community (EC) countries—encouraged by European consumer electronics manufacturers—mounted a coordinated blocking effort. After considerable debate, Study Group 11 passed the proposed recommendation to the plenary assembly for further consideration but not as a formal recommendation.

At the May 1986 CCIR plenary assembly in Dubrovnik, the issue of HDTV production standards was by far the most contentious and politically charged of all the items on the agenda. A coalition of EC administrations, concerned with problems involving their different electrical systems and concerns raised by European manufacturers of home electronics equipment, tabled an alternative HDTV studio standard. In the stalemate that evolved, the plenary decided to postpone a decision by agreeing to convene an extraordinary meeting of Study Group 11 within 2 years to deal with the HDTV issue.

Despite the inability to adopt a recommendation at the 1986 plenary in Dubrovnik, work has continued in the CCIR to reach consensus on an international HDTV production standard, which would benefit all countries. Some incremental progress has been made. In January 1989, a CCIR working group produced the outline of a draft proposal for a CCIR recommendation on the single, worldwide HDTV production standard. The outline identifies over 30 basic parameters for which values must be approved. Although some fundamental parameters still remain to be defined, a consensus was reached on over one-half of those already defined. Further progress is expected at the May 1989 Study Group 11 extraordinary meeting.

We recognize that many circumstances have changed since 1985 and 1986 when the United States first supported the proposed 1,125/60 production standard. Also, we are aware that a broad spectrum of industry responded to a NTIA notice of inquiry on production standards. The comments, which were due March 1, 1989, are being analyzed now.

The ATSC and SMPTE organizations have also continued periodic reviews of the situation, have further defined the 1,125/60 standard, and continue to support 1,125/60 as an international production standard. ANSI approved the 1,125/60 standard in October 1988, denied an appeal for reconsideration by a member in February 1989, and has scheduled a hearing for a second appeal by the same member. In addition, other groups have signaled strong support for the 1,125/60 proposal in recent months, including the International Brotherhood of Electrical Workers (March 1989); the Department for Professional Employees, AFL/CIO [American Federation of Labor and Congress of Industrial Organizations] (December 1988); the International Alliance of Theatrical and Stage Employees (November 1988); and the International Photographers Guild (December 1988).

From time to time, advocates of other standards have requested the withdrawal of U.S. support for the 1,125/60 standard. Very recently, the Motion Picture Association of America (MPAA) issued a new statement on HDTV. Recognizing their earlier endorsement of 1,125/60, MPAA emphasized that they now "believe a more thorough and detailed evaluation of all HDTV systems is necessary" to ensure that potential benefits are realized. Nevertheless, they repeated their support for adoption of a single, worldwide HDTV studio standard, such as the 35mm film standard continues to serve in the film community. MPAA also expressed support for the development of a "global multistandard TV set," capable of receiving any transmission standard. For the present, however, neither our advisory groups nor the voluntary industry organizations have recommended any alternative to the 1,125/60 international production standard.

Our position is clear: we will base our standards policy on testing and evaluation by voluntary industry standards making organizations. Our advisory committee mechanisms will continue to evaluate tests, and we will formulate policy taking into account private-sector recommendations, such as those which emerge from the NTIA notice of inquiry. Given the diversity of U.S. interests and our strong marketplace traditions, the private sector must play a determinant role.

Activities by Other Countries

Our diplomatic missions overseas have been actively following HDTV developments in other countries. The more information we can obtain about HDTV developments abroad, the better will be the chances for U.S. industry to find opportunities to enter these markets.

The 1,125/60 standard has the backing of the United States, Canada, and Japan. Production equipment based on this standard is available and in use. Nearly 80 television programs have been produced in the United States, Canada, Japan, France, West Germany, Italy, and Spain using such equipment. Estimates of Japanese private and public entity spending on HDTV development since 1970 range as high as $1 billion. Some estimates of HDTV spending by NHK, which receives public support, go as high as $500 million.

Several EC administrations are actively promoting the 1,250 lines and 50 frames per second standard. The most notable activists are France, the Federal Republic of Germany, the Netherlands, the United Kingdom, and Belgium. At last January's CCIR meeting, Italy requested that its name be removed from some of the documents submitted by EC administrations, including the document containing the recommendation for the 1,250/50 standard. Spain did likewise. Even without a consensus, the EC is engaged in a well-organized campaign to accelerate the introduction of HDTV in Europe and to ensure the wide use and sales of European HDTV systems and programs throughout the world. Eight EC nations have contributed close to $70 million since 1986 for HDTV research and development under a "Eureka" framework agreement project.

The Soviet Union recently proposed a series of meetings of major broadcasters, broadcasting unions, and television and motion picture producers. The stated purpose was to devise a series of tests to evaluate the three standards proposed to the CCIR. These include the 1,125/60 standard supported by the United States, Canada, and Japan; the 1,250/50 standard favored by some EC administrations; and the 1,375/50 proposal recently tabled by the Soviet Union at a January 1989 CCIR meeting. The data to be derived from the tests will be provided to the CCIR. The tests are to be conducted in Moscow beginning in March 1989. The U.S. Government was neither invited nor does it intend to participate in the tests.

Future Steps

Our goal remains to move the concept of a single, worldwide production standard forward. We continue to support the adoption by the CCIR of the 1,125/60 studio standard—the only one of the three proposals to enjoy widespread U.S. industry support. The next important HDTV meeting of the CCIR is the extraordinary meeting of Study Group 11 from May 10–16, 1989, in Geneva. We are organizing a delegation of public and private-sector experts in the question of HDTV production standards. With the advice provided through our National CCIR Organization and other sources, we are formulating positions on the various agenda items to be considered at this important meeting. A final Study Group 11 meeting before the CCIR plenary will take place in Geneva from October 9–25, 1989.

The CCIR plenary assembly will take up the recommendations of Study Group 11 in May of next year. We hope that the CCIR plenary will have the opportunity to adopt a worldwide production standard. Regardless of whether the results of Study Group 11 permit such consideration, we will work both through the ITU and bilaterally to promote adoption of a worldwide standard that will further U.S. interests.

While the CCIR has only been marginally involved so far in the question of HDTV transmission standards, we expect work in this area will increase significantly in the future. In the meantime, we will continue to monitor ongoing CCIR work in transmission standards and testing worldwide of competing systems. As we await a FCC determination of a U.S. HDTV transmission standard, we will, as part of the interagency process, offer our analysis of the foreign policy implications of the standard to be adopted. I should note that the establishment of unique U.S. or North American transmission standards would not necessarily prejudice U.S. leadership in worldwide production of HDTV video programming and films. It is not critical for economy or efficiency that production and transmission standards be identical.

We are prepared to work bilaterally and multilaterally to promote U.S. interests through both transmission and production standards. In con-

junction with other U.S. Government agencies, for instance, we will take appropriate measures to discourage the use of HDTV transmission and production standards as barriers to the entry of U.S. manufactured products and programs.

Conclusion

In conclusion, let me summarize the major points I would like to emphasize for the subcommittee.

First, adoption of a single, worldwide HDTV production standard by member countries of the ITU is highly important for U.S. interests.

Second, the U.S. Government relies heavily on the private sector for recommendations on international standards, and our proposal for an international HDTV production standard has closely paralleled the industry consensus.

Third, although the U.S. proposal for an 1,125/60 world production standard has received a setback in the CCIR, incremental progress is being made which has already narrowed considerably the parameters in dispute.

Fourth, the HDTV environment is in a state of rapid evolution. Technology is advancing, and governments and private-sector groups around the world are rethinking their policies on both production and transmission standards. In this dynamic situation, the State Department will continue to work with U.S. industry and other government agencies to ensure that our policies reflect the best judgment of all relevant groups.

Fifth, the Administration will be reviewing the production standard issue as part of an overall review of advanced television policy.

Our efforts on HDTV production and transmission standards clearly will impact upon U.S. leadership in the production of video programming and films, as well as our position in consumer electronics. In this regard, I am pleased to note the announcement that AT&T [American Telephone and Telegraph Company] and Zenith are considering a joint venture to develop a prototype HDTV set. This announcement is evidence that significant U.S. companies are willing to collaborate and commit money to this new technology.

Once again, I commend the subcommittee for its foresight in convoking these very timely hearings, which should help U.S. industry and government chart a course for the future.■

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